

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): A process for manufacturing (U,Pu)O₂ mixed oxide nuclear fuel pellets,

comprising the steps of:

~~_____ comprising:~~

- * dosing and first blending (1) ~~of PuO₂ and/or~~ with a first portion of UO₂ powders and/or fuel manufacturing scrap, to form a first blend;
- * ~~miconization~~ miconizing (2) and forced sieving (3) ~~of this~~ the first blend, to form a conditioned first blend;
- * selecting non-free-flowing UO₂ as a second portion of UO₂;
- * mechanically granulating (29) the second portion of UO₂ so as to form granulated free-flowing UO₂;
- * ~~additional~~ additionally dosing and second blending (4) ~~of the first blend thus treated, the conditioned first blend, the granulated free-flowing UO₂ and possibly scrap;~~
- * ~~addition and blending of~~ adding and blending lubricants and/or poreformers (5), separately or in combination with the second blending step (4);
- * pelletizing (6) ~~of the second blend; and~~
- * sintering (7) ~~of the pellets thus formed; and~~ the pellets thus formed,
~~_____ furthermore comprising, for at least one portion of the UO₂ powders:~~
- * ~~selection of non free flowing UO₂; and~~
- * ~~mechanical granulation treatment (29) of the UO₂ so as to make it free flowing, before the UO₂ is used as granules in at least said second blending operation.~~
wherein said granulating step further comprises the steps of:

- * compressing (30) non free-flowing UO_2 to form tablets;
- * crushing (31) the tablets, until a free-flowing crushed material has been formed; and
- * using at least one portion of this free-flowing crushed material for said second blending operation (4).

2. (canceled).

3. (currently amended): The process as claimed in claim 21, ~~characterized in that the compression (30) is carried out~~ further comprising the step of carrying out the compressing step at a pressure of between 40 and 200 MPa.

4. (currently amended): The process as claimed in claim 21, characterized in that a jaw crusher or a roll mill is used for the crushing step (31).

5. (previously presented): The process as claimed in claim 1, characterized in that it furthermore comprises particle size selection by sieving (32) of the granulated UO_2 before it is used.

6. (original): The process as claimed in claim 5, characterized in that the granulated UO_2 is separated, by the sieving (32), into at least two fractions of different particle sizes, the finest fraction possibly being introduced into the aforementioned first blending operation (1) whereas the other fraction is incorporated into the second blending operation (4).

7. (original): The process as claimed in claim 1, characterized in that it comprises, in order to carry out said granulation of the non-free-flowing UO_2 , an operation to force the latter through a screen or sieve, the amount of additive(s), the mesh size of the screen or sieve and the pressure exerted on the powder all being adjusted so as to form granules having the appropriate properties.

8. (previously presented): The process as claimed in claim 1, characterized in that, for said granulation of the non-free-flowing UO_2 , a lubricant is added to it.

9. (previously presented): The process as claimed in claim 1, characterized in that, for said granulation of the non-free-flowing UO_2 , a binder is added to it.

AMENDMENT UNDER 37 C.F.R. § 1.111
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10. (previously presented): The process as claimed in claim 1, characterized in that the sintering (7) of the fuel pellets in an atmosphere of argon and hydrogen is carried out at a temperature between 1600 and 1760°C, the argon possibly being replaced with nitrogen.

11. (previously presented): The process as claimed in claim 1, characterized in that, during the sintering (7), the oxygen partial pressure is adjusted, preferably by adjusting the H_2/H_2O ratio in the flushing gas, in order to improve the interdiffusion of the PuO_2 and UO_2 oxides.